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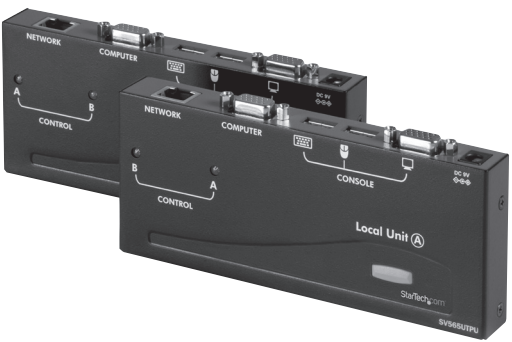
# VGA USB KVM Console Extender over CAT5 UTP (500 ft)

SV565UTPU

SV565UTPUGB

SV565UTPUEU

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FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

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# Introduction

Thank you for purchasing a StarTech.com KVM extender. This product allows a computer to control a host system from a remote location at a distance of up to 500 feet (150 meters). For ease of installation, this product uses standard Category 5, 5E, or 6 network cabling that fits easily into almost any existing network infrastructure. For added versatility, the KVM extender supports either PS/2 or USB computer interfaces. Console support is provided using standard USB and VGA connectors.

## Features

- Can be used with a single computer or connected to an existing KVM switch
- Easy installation using industry-standard UTP network cable
- Intuitive hotkey commands
- Supports auto-switching between host and remote users or dedicated control
- USB computers are supported at the host and remote locations (USB keyboard and mouse required for remote console)

## System Requirements

- 1 x integrated KVM cable each for the host and remote computers. Longer cables are available from StarTech.com, part numbers: SVECONx (PS/2), SVECONUSx (USB)
- Unshielded Category 5/5e/6 twisted pair (UTP) straight-through network cable terminated at each end with RJ-45 connectors (if using surface cabling)

  OR

- Unshielded Category 5/5e/6 twisted pair (UTP) straight-through network cable terminated at each end in a wall-mounted outlet, with a standard Category 5/5e/6 patch cable, at both locations (if using premises cabling)

**NOTE:** The total length of cable between the Host and Remote Units cannot exceed 500 feet (150 meters), including patch cables (if used). Category 5e and 6 cabling is compatible with this product and may improve performance.

**NOTE:** Long cable lengths between the Host and Remote Units may adversely affect image quality at high resolutions and refresh rates. If you need to run your remote displays at high resolutions and frequencies, use as little cabling between locations as possible and avoid practices such as "coiling" unused cable in a ceiling.

This product will also control a KVM switch, allowing you to manage more than one computer remotely. In this configuration, you can connect the KVM extender's Host Unit to the "console" ports on the KVM. You must use the provided power adapters if using this configuration. You should set the Host Unit to Compatibility Mode before connecting it to a KVM that uses the [Ctrl] key as its hotkey sequence; see page 8 for details.

## Package Contents

- 1 x Host Unit
- 1 x Remote Unit
- 1 x Instruction Manual
- 2 x Power adapters
- 2 x 6 ft. 2-in-1 USB VGA KVM cables
- 1 x Set of rubber mounting feet

# Connecting Your KVM Extender

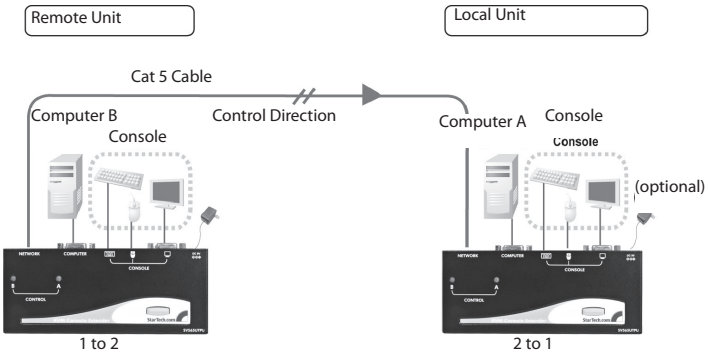
## Preparing Your Site

Before you can install the the product, you need to prepare your site.

1. Determine where the host computer will be located and set up the computer.
2. Determine where the console devices (mouse, keyboard, monitor) will be located and place them appropriately.
3. a) If you are using surface cabling, ensure you have enough Category 5 unshielded twisted pair (UTP) network cabling to connect the Host Unit to the Remote Unit's location, and that each end is terminated with a RJ-45 connector.

   OR

   b) If you are using premises cabling, ensure that the Category 5 unshielded twisted pair (UTP) network cabling between the Host Unit and the Remote Unit has been properly terminated in a wall outlet in each location and there is a patch cable long enough to connect the Remote Unit and the Host Unit to their respective outlets.




## Installing the Host Unit

1. Place the Host Unit near the computer.
2. Switch off the computer and disconnect any connected devices.
3. Using the provided StarTech.com integrated KVM cable (see page 15 for alternative part numbers), connect the end of the cable that has two (USB) or three (PS/2 + VGA) connectors to the VGA Out connector and the USB or mouse and keyboard PS/2 connectors on the computer as appropriate. (The PS/2 version of the cable is color-coded.) Connect the opposite end of the cable with a single connector to the gray-coded connector marked COMPUTER on the Host Unit of the KVM extender.
4. If you wish to have console access to the host computer, connect a USB mouse, keyboard, and VGA monitor to the indicators marked as CONSOLE on the Host Unit.
5. Connect the UTP cable connection for Remote Unit to the NETWORK RJ-45 connector on the Host Unit. Connect the opposite end to a terminated wall outlet (if you are using premises cabling).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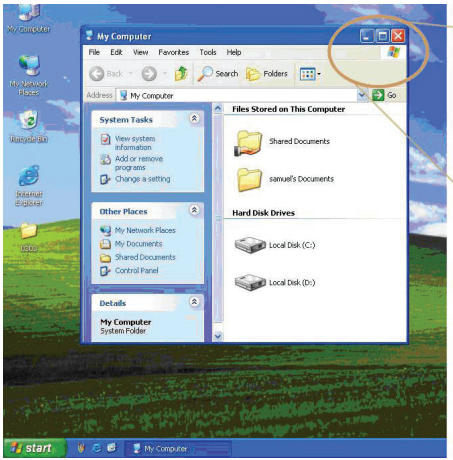
## Installing the Remote Unit

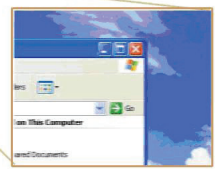
1. Place the Remote Unit near the computer.
2. Switch off the computer and disconnect any existing VGA and input connections.
3. Using a StarTech.com integrated KVM cable (see page 15 for part numbers), connect the end of the cable that has two (USB) or three (PS/2) connectors to the VGA Out connector and the USB or mouse and keyboard PS/2 connectors on the computer as appropriate. (The PS/2 version of the cable is color-coded.) Connect the opposite end of the cable with a single connector to the gray-coded connector marked COMPUTER on the Remote Unit of the KVM extender.
4. Connect a USB mouse, keyboard, and a VGA monitor to the indicators marked as CONSOLE on the Remote Unit.
5. Connect the UTP cable connection for Remote Unit to the NETWORK RJ-45 connector on the Remote Unit. Connect the opposite end to a terminated wall outlet (if using premises cabling).

**CAUTION:** The UTP network cables that connect the Host and Remote Units carry electrical current and should not be plugged in to other devices, as they may cause damage. We strongly recommend marking the cables you are using with this product at both locations for easy identification.

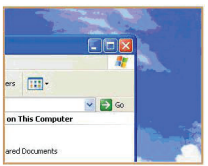
# Video Compensation

Video Compensation allows the user to adjust the equalization on the Remote Unit to optimize video performance based on the length of cable being used, as well as other factors that may affect . There are five segments of various lengths of CAT 5 cables from which to chose; to achieve the best visibility, please refer to the section titled Keyboard Shortcut Command Sequences, to adjust the video compensation.



Before Video Compensation



After Video Compensation

First, note the length of CAT 5 cable you used. Then, use the hotkeys to adjust the video compensation accordingly. You can use the hotkey sequence as outlined in the section titled Keyboard Shortcut Command Sequences.



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# Using the KVM Extender

This section details how to use your KVM extender at both the host and remote locations.

## Using the Host Unit

The Host Unit allows users connected to the Host and Remote units to share control of devices (hosts, computers, KVM Switches) connected to it.

The Host Unit has three modes that control which user may access the system at a given time: Auto (the KVM extender looks for keyboard or mouse activity from both A and B and automatically accepts input from the active console), Local (only the user seated at the Host unit can access the system), and Remote (only the user at the Remote station can access the system).

You can use either keyboard shortcuts (if there is a keyboard and mouse attached) or the mode switch on the top of the Host Unit to control which user has access to devices connected to the Host unit, by pressing the button in sequence.

By default, the Host Unit operates in Auto mode, and switches to the next mode in the sequence each time the switch is pressed as follows:

Having a keyboard and mouse attached to the console ports on the Host Unit is recommended, since it offers access to a number of extended features.

**LED Indicators**

| Mode | A Indicator | B Indicator |
|---|---|---|
| Auto (Auto senses activity) | Flashing | Flashing |
| Local (User at Local Unit has exclusive control) | On (solid) | Off |
| Remote (User at Remote Unit has exclusive control) | Off | On (solid) |



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**Keyboard Shortcut Command Sequences**

| Standard Command | With Compatibility Mode Enabled | Description |
|---|---|---|
| [Ctrl] - [Ctrl] - [T] | [Ctrl] - [Ctrl] - [T] | Toggles control of Computer A between Auto, Local, and Remote modes |
| [Ctrl] - [Ctrl] - [Esc] | [Ctrl] - [Ctrl] - [Esc] | Cancels the hotkey sequence |
| [Ctrl] - [Ctrl] - [Alt]+[E] | [Ctrl] - [Ctrl] - [Alt]+[E] | Enables (2 beeps) or disables (1 beep) Compatibility Mode so that the KVM extender will work with a KVM switch that also uses a [Ctrl] hotkey sequence |
| [Ctrl] - [Ctrl] - [1] | [Ctrl] - [Ctrl] - [E] - [1] | **Local Mode**: Allows the user at Local Unit A exclusive access to the system; remote access from Remote Unit B (Remote Unit B) is disabled |
| [Ctrl] - [Ctrl] - [2] | [Ctrl] - [Ctrl] - [E] - [2] | **Remote Mode:** Allows the console at Remote Unit B exclusive access to Computer A; access to the computer from the Host Unit is disabled |
| [Ctrl] - [Ctrl] - [3] | [Ctrl] - [Ctrl] - [E] - [3] | **Auto Mode:** Wait for console activity |
| [Ctrl] - [Ctrl] - [F3] | [Ctrl] - [Ctrl] - [E] - [F3] | Sets the interval of inactivity in seconds that the Host Unit will wait before returning to Auto Mode after a Unit has assumed control |
| [Ctrl] - [Ctrl] - [F4] | [Ctrl] - [Ctrl] - [E] - [F4] | Adjusts the typematic rate for improved keyboard responsiveness (PS/2 keyboard only) |

| Standard Command | With Compatibility Mode Enabled | Description |
|---|---|---|
| [Ctrl] - [Ctrl] - [F6] | [Ctrl] - [Ctrl] - [E] - [F6] | **Privacy Setting:**<br>**A. Local Unit in Local mode**<br>( LED B: Off, LED A: On)<br>1 beep: Reset to Factory Default.<br>2/3 beeps: Disable the Local Unit output video signal.<br>**B. Local Unit in Auto mode**<br>( LED A&B flashes alternately)<br>1 beep: Reset to Factory Default.<br>2 beeps: Upon keyboard/mouse activation, disables the Local Unit video output temporarily. (Set for 5,15,30 or 60 second interval)<br>3 beeps: Upon keyboard/mouse activation the Remote Unit or Local Unit users can disable the output video signal temporarily. (The user can protect their privacy for 5,15,30,60 seconds) |
| [Ctrl] - [Ctrl] - [F12] | [Ctrl] - [Ctrl] - [E] - [F12] | Resets PS/2 mouse synchronization |
| [Ctrl] - [Ctrl] - [V] - 4 digit code | [Ctrl] - [Ctrl] - [V] - 4 digit code | Set the **maximum video resolution** (requires computer restart) for both Remote and Host units.<br>See page 13 for codes. |



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**Beep Codes**

Some of the keyboard command sequences you issue to the Host Unit have multiple possible settings. The unit will beep to indicate what setting you have selected for the command you issued. (A short beep followed by a long beep indicates an invalid command.)

[Ctrl] - [Ctrl] - [Alt]+[E] (Compatibility Mode)

1 beep: disabled

2 beeps: enabled

[Ctrl] - [Ctrl] - [F3] (Inactivity Interval for Auto Mode)

1 beep: 5 seconds

2 beeps: 15 seconds

3 beeps: 30 seconds

4 beeps: 60 seconds

[Ctrl] - [Ctrl] - [F4] (Typematic Rate)

1 beep: 6 characters/sec.

2 beeps: 12 characters/sec.

3 beeps: 20 characters/sec.

4 beeps: 30 characters/sec.

**Note:** Commands described in the [Key] - [Key] format are keys that must be pressed in order on the keyboard. Commands described in the [Key]+[Key] format must be pressed simultaneously.

**Note:** If the Num Lock, Caps Lock, and Scroll Lock lights are flashing in unison on the keyboard, the other Unit has control of Computer A. You will not be able to use the computer or issue commands until the other unit has finished using the computer.

**Note:** If the Extender is operating in Compatability Mode ([Ctrl] - [Ctrl] - [E] hotkey sequence), you must enter [Ctrl] - [Ctrl] - [E] - [E] to access port E on the attached KVM switch.

## Using the Remote Unit

The Remote Unit allows a user at the Remote Unit to assume control of devices connected to the Host Unit, if the Host Unit is set to Auto or Remote mode, and it also permits the user seated at the Remote Unit to use any connected system as though the KVM Extender was transparent.

You can use either keyboard shortcuts or the mode switch on the top of the Host Unit to alternate control between A and B. Unlike the Host Unit, however, the switch on top of the Remote unit only offers two selectable modes:

**LED Indicators**

| Mode | A Indicator | B Indicator |
|---|---|---|
| Remote Access (Computer A) | On (solid) | Off |
| Local Access (Computer B) | Off | On (solid) |

**Keyboard Shortcut Command Sequences**

| Standard Command | With Compatibility Mode Enabled | Description |
|---|---|---|
| [Ctrl] - [Ctrl] - [T] | [Ctrl] - [Ctrl] - [T] | Toggles console control between Computer A and Computer B |
| [Ctrl] - [Ctrl] - [Esc] | [Ctrl] - [Ctrl] - [Esc] | Cancels the hotkey sequence |
| [Ctrl] - [Ctrl] - [Alt]+[E] | [Ctrl] - [Ctrl] - [Alt]+[E] | Enables (2 beeps) or disables (1 beep) Compatibility Mode so that the KVM extender will work with a KVM switch that also uses a [Ctrl] hotkey sequence |

| Standard Command | With Compatibility Mode Enabled | Description |
|---|---|---|
| [Ctrl] - [Ctrl] - [1] | [Ctrl] - [Ctrl] - [E] - [1] | Switches control to Computer B |
| [Ctrl] - [Ctrl] - [2] | [Ctrl] - [Ctrl] - [E] - [2] | Switches control to Computer A (input allowed only if the Host Unit is in Remote or Auto mode) |
| [Ctrl] - [Ctrl] - [F2] | [Ctrl] - [Ctrl] - [E] - [F2] | Toggles console control between Computer A and Computer B |
| [Ctrl] - [Ctrl] - [F4] | [Ctrl] - [Ctrl] - [E] - [F4] | Adjusts the typematic rate for improved keyboard responsiveness (PS/2 keyboard only) |
| [Ctrl] - [Ctrl] - [F11] | [Ctrl] - [Ctrl] - [E] - [F11] | Adjusts remote video quality based on the length of UTP cabling between the two computers (available only when switched to Computer A) |
| [Ctrl] - [Ctrl] - [V] - 4 digit code | [Ctrl] - [Ctrl] - [V] - 4 digit code | Set **maximum video resolution** (requires computer restart) for both Remote/Host units.<br>See page 13 for codes. |


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**Beep Codes**

Some of the keyboard command sequences you issue to the Remote Unit have multiple possible settings. The Unit will beep to indicate what setting you have selected for the command you issued. (A short beep followed by a long beep indicates an invalid command.)

[Ctrl] - [Ctrl] - [Alt]+[E] (Compatibility Mode)

1 beep: disabled

2 beeps: enabled

[Ctrl] - [Ctrl] - [F11] (Remote Image Quality Adjustment)

1 beep: 0 ~ 130 feet (0 ~ 40 meters) of UTP cable length

2 beeps: 130 ~ 260 feet (40 ~ 80 meters) of UTP cable length

3 beeps: 260 ~ 390 feet (80 ~ 120 meters) of UTP cable length

4 beeps: 390 ~ 500 feet (120 ~ 150 meters) of UTP cable length

[Ctrl] - [Ctrl] - [F4] (Typematic Rate)

1 beep: 6 characters/sec.

2 beeps: 12 characters/sec.

3 beeps: 20 characters/sec.

4 beeps: 30 characters/sec.

**Note:** Commands described in the [Key] - [Key] format are keys that must be pressed in order on the keyboard. Commands described in the [Key]+[Key] format must be pressed simultaneously.

**Note:** If the NumLock, CapsLock, and ScrollLock lights are flashing in unison on the keyboard, the other Unit has control of Computer A. You will not be able to use A until the other Unit releases access to that computer.

**Note:** If the Extender is operating in Compatability Mode ([Ctrl] - [Ctrl] - [E] hotkey sequence), you must enter [Ctrl] - [Ctrl] - [E] - [E] to access port E on the attached KVM switch.

**Set Maximum Video Resolution**

By default the KVM switch is set to output an EDID signal with a maximum video resolution of 1024 x 768 to the host computer systems. To be able to set a higher video resolution on the host computer systems, use the following command with the 4 digit code for the maximum video resolution you wish to set.

**NOTE:** Do not use the numeric keypad for entering the 4-Digit Code. Only use the number keys along the top row of the keyboard.

**Left <CTRL>, Left <CTRL>, V, 4 digit code**

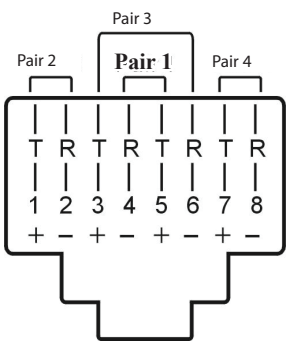
| 4-Digit Code | Resolution | 4-Digit Code | Resolution |
|---|---|---|---|
| 1007 | 1024 x 768 | 1609 | 1600 x 900 |
| 1208 | 1280 x 800 | 1612 | 1600 x 1200 |
| 1210 | 1280 x 1024 | 1610 | 1680 x 1050 |
| 1307 | 1360 x 768 | 1910 | 1920 x 1080 |
| 1409 | 1440 x 900 | 1912 | 1920 x 1200 |
| 1410 | 1440 x 1050 | | |

**NOTE:** You may need to reboot the host computer(s) for the new settings to take affect. If not done automatically by the host computer's operating system, you may then need to manually adjust the display settings to the new maximum resolution.

# Specifications

| | |
|---|---|
| **Maximum Resolution** | 1024 x 768 (at maximum UTP cable length)<br>Actual maximum resolution varies by network cable length |
| **Maximum Range** | 500 feet (150 meters) |
| **Network Cabling Type** | Straight-through Unshielded Twisted Pair (UTP) Cat. 5+ |
| **Connectors** | Each, Host and Remote Unit<br>2 x HD-15 female (1 x KVM, 1 x console VGA)<br>1 x RJ-45<br>2 x USB keyboard/mouse (for console)<br>1 x Power (optional) |
| **Power Adapter** | 9V DC, 600mA, center positive (per Unit)<br>(Optional; only required when connected using a conventional KVM switch) |

**RJ-45 Connector Pinout**




| Pin | Wire Color | Pair | Function |
|---|---|---|---|
| 1 | White/ Orange | 2 | T |
| 2 | Orange | 2 | R |
| 3 | White/ Green | 3 | T |
| 4 | Blue | 1 | R |
| 5 | White/ Blue | 1 | T |
| 6 | Green | 3 | R |
| 7 | White/ Brown | 4 | T |
| 8 | Brown | 4 | R |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This product is backed by a two year warranty.

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